

Voice Telephone Services: Status as of June 30, 2019

Industry Analysis Division
Office of Economics and Analytics
April 2021



This report is available for reference in the FCC's Reference Information Center, 45 L Street NE, Washington, DC 20554. Copies may be purchased by contacting Best Copy and Printing, Inc., 45 L Street NE, Washington, DC 20554, telephone (800) 378-3160, or via their website at www.bcpweb.com. The report can also be downloaded from the Voice Telephone Services Reports webpage at <https://www.fcc.gov/voice-telephone-services-report>.

Table of Contents

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Introduction | 1 |
| Comparison to Local Telephone Competition Report | 1 |
| Retail Voice Telephone Service Connections | 2 |
| Figure 1 Retail Voice Telephone Service Connections, 2016-2019..... | 2 |
| Figure 2 Wireline Retail Voice Telephone Service Connections by Technology, Regulatory Status, and Customer Type as of June 30, 2019..... | 3 |
| Retail Service Relationships | 4 |
| Figure 3 Interconnected VoIP Subscribership by Reported Service Features, Regulatory Status, and Customer Type as of June 30, 2019..... | 5 |
| Figure 4 Retail Relationships of Wireline Voice Telephone Service with Internet Access Service by Regulatory Status as of June 30, 2019..... | 6 |
| Detailed Voice Telephone Services Data | 7 |
| Table 1 Voice Subscriptions – Total for US | 8 |
| Table 2 Number of Providers Reporting Voice Subscriptions – Total for US | 10 |
| Technical Notes..... | 12 |
| Glossary | 13 |
| Materials Available on the FCC Website (https://www.fcc.gov/voice-telephone-services-report) | |
| Table 1 Voice Subscriptions – Total for US | |
| Table 2 Number of Providers Reporting Voice Subscriptions – Total for US | |
| Table S.1 Voice Subscriptions – State | |
| Table S.2 Number of Providers Reporting Voice Subscriptions – State | |
| Table S.3 Fixed Voice Subscriptions – County | |
| Table S.4 Voice Subscriptions – Back to 2008 | |
| Table S.5 Number of Providers Reporting Voice Subscriptions – Back to 2014 | |
| Table S.6 Crosswalk to Local Telephone Competition: Status as of December 31, 2013 report | |

Voice Telephone Services: Status as of June 30, 2019

Introduction

The Commission has used FCC Form 477 to collect subscribership information from providers of voice telephone services – incumbent local exchange carriers (ILECs), competitive local exchange carriers (CLECs), and mobile voice providers – since December 1999.¹ The Commission has required interconnected Voice over Internet Protocol (“interconnected VoIP”) service providers to report subscribership information since December 2008.² Also, starting with the data reported for 2014, Form 477 has been modified to distinguish “over-the-top” (colloquially, “bring your own broadband”) interconnected VoIP subscriptions from other interconnected VoIP subscriptions.³

Comparison to Local Telephone Competition Report

This report was previously titled *Local Telephone Competition*. Reports under the earlier title summarized Form 477 data through December 31, 2013. Reports under the current title provide much of the summarized data as supplemental spreadsheet files, available at <https://www.fcc.gov/voice-telephone-services-report>. A crosswalk between data elements in this report and data elements in the *Local Telephone Competition* report is available at that page.

¹ An Incumbent Local Exchange Carrier is an entity that was providing local exchange telephone service in a particular area on February 8, 1996, the date on which the Telecommunications Act of 1996 was enacted into law. See 47 C.F.R. § 51.5.

² The FCC’s rules (at 47 C.F.R. § 9.3) state:

An interconnected Voice over Internet Protocol (VoIP) service is a service that:

- (1) Enables real-time, two-way voice communications;
- (2) Requires a broadband connection from the user’s location;
- (3) Requires Internet protocol-compatible customer premises equipment; and
- (4) Permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network.

We note that the current interpretation of element (4) of the definition excludes certain VoIP services (e.g., those offered by Skype) and subscribers to those services are not reported on Form 477.

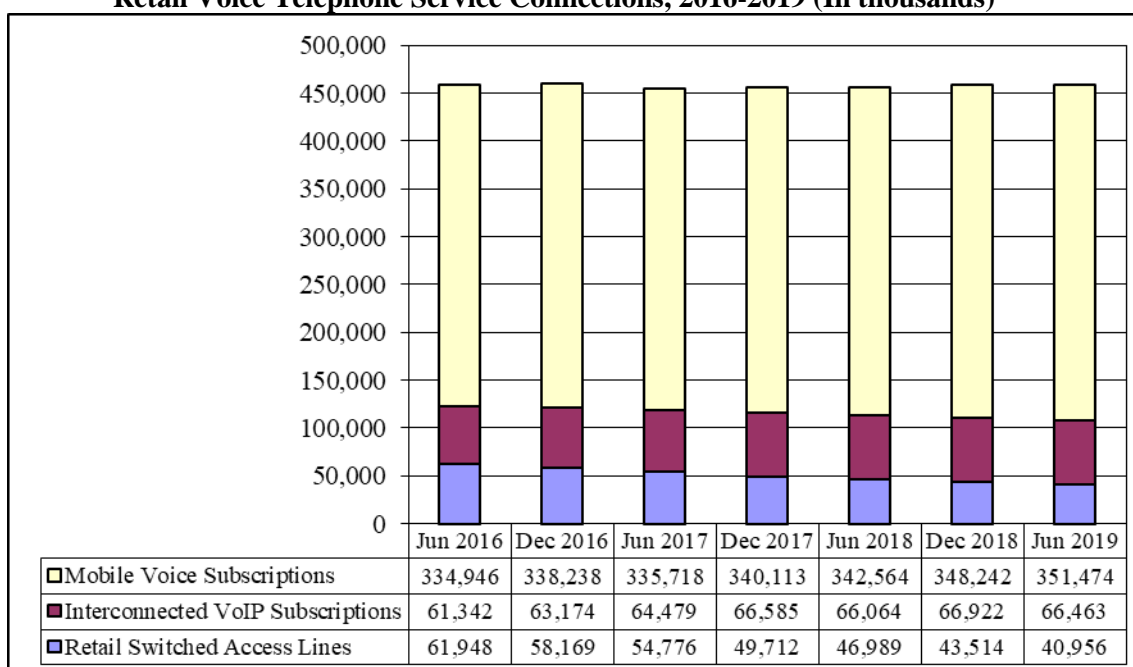
³ The Technical Notes and the Glossary that appear at the end of this report provide more-detailed information about the current Form 477 and the meaning of terms used in this report. To be consistent with modifications to Form 477 adopted in 2013 (to be effective for reporting June 2014 and later data), this report no longer uses the terms “standalone VoIP” and “broadband bundle.” Standalone VoIP in the earlier, *Local Telephone Competition*, reports has a different meaning from “over-the-top” VoIP in this report. In particular, subscriptions reported as standalone VoIP for December 2013 and earlier dates included over-the-top subscriptions as defined in this report and also video-plus-VoIP service subscriptions sold by cable TV system operators and other entities that own last-mile facilities to end-user premises. We note that, accordingly, 13% of total interconnected VoIP subscriptions were categorized as standalone VoIP in December 2013 and, by contrast, 10% of total interconnected VoIP subscriptions were categorized as over-the-top VoIP in December 2014.

Retail Voice Telephone Service Connections

Retail voice telephone service customers are served by two wireline technologies – end-user switched access lines and interconnected VoIP subscriptions – and by mobile wireless subscriptions.⁴

- In June 2019, there were 41 million end-user switched access lines in service, 66 million interconnected VoIP subscriptions, and 351 million mobile subscriptions, for a total of 459 million retail voice telephone service connections in the United States. See Figure 1.
- Over the three-year period presented in Figure 1, interconnected VoIP subscriptions increased at a compound annual growth rate of 3%, mobile voice subscriptions increased at a compound annual growth rate of 2%, and retail switched access lines declined at a compound annual growth rate of 13% per year.⁵

Figure 1
Retail Voice Telephone Service Connections, 2016-2019 (In thousands)



Note: Some previously published data have been revised.

- Of the 107 million wireline retail voice telephone service connections (including both switched access lines and interconnected VoIP subscriptions) in June 2019, 54 million (or 50%) were residential connections and 54 million (or 50%) were business connections.⁶ See Figure 2.

⁴ The presentation of mobile wireless telephone subscriber counts in this report does not constitute, or imply, Commission analysis of the extent to which wireline and mobile wireless telephone services are demand substitutes or complements in general or in any particular situation.

⁵ The compound annual growth rate is a smoothed rate of growth calculated in three steps. First, divide the ending value by the beginning value. Second, raise the result of that division to a power equal to one divided by the number of years in the period (in this case, 3 years, so the power is 1/3). Third, subtract the number one from the result of the second step.

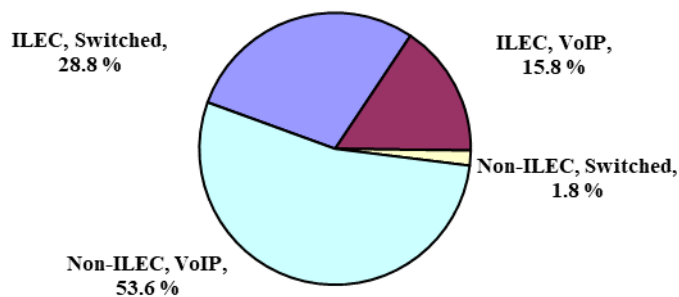
⁶ FCC Form 477 does not distinguish between residential and business subscribers to mobile *voice* service. The information that Form 477 collects about mobile *broadband* service is summarized elsewhere; see *Internet Access Services Reports*, available at <https://www.fcc.gov/internet-access-services-reports>.

Figure 2
Wireline Retail Voice Telephone Service Connections by Technology, Regulatory Status,
and Customer Type as of June 30, 2019 (In thousands)

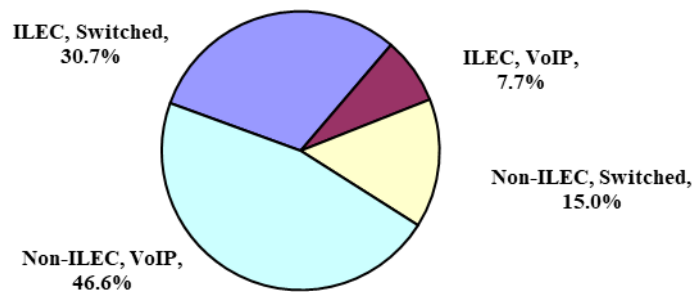
| Total | Switched Access Lines | Interconnected VoIP | Total |
|--------------------------|----------------------------------|--------------------------------|----------------|
| ILEC | 31,974 | 12,663 | 44,638 |
| Non-ILEC | 8,982 | 53,800 | 62,782 |
| Total | 40,956 | 66,463 | 107,419 |
| Residential | | | |
| ILEC | 15,510 | 8,516 | 24,026 |
| Non-ILEC | 959 | 28,834 | 29,793 |
| Residential Total | 16,469 | 37,350 | 53,819 |
| Business | | | |
| ILEC | 16,464 | 4,147 | 20,612 |
| Non-ILEC | 8,023 | 24,965 | 32,989 |
| Business Total | 24,487 | 29,113 | 53,600 |

Note: Figures may not sum to totals due to rounding. A voice service affiliate of an ILEC that is operating outside of the ILEC's traditional service area ("study area") is a Non-ILEC.

Residential



Business



- Cross-classified by technology and the retailer’s regulatory status in Figure 2, the 54 million wireline residential connections in June 2019 were: 28.8% ILEC switched access lines, 53.6% non-ILEC interconnected VoIP subscriptions, 15.8% ILEC interconnected VoIP subscriptions, and 1.8% non-ILEC switched access lines. Similarly, the 54 million wireline business connections were: 30.7% ILEC switched access lines, 46.6% non-ILEC interconnected VoIP subscriptions, 7.7% ILEC interconnected VoIP subscriptions, and 15.0% non-ILEC switched access lines.

Retail Service Relationships

The revised Form 477 collects two types of information about retail service relationships.

- Interconnected VoIP service retailers distinguish over-the-top (“OTT”) interconnected VoIP subscriptions—where the end user accesses the service using a broadband connection from an entity that is not affiliated with the VoIP service retailer—from all other interconnected VoIP subscriptions.⁷ See Figure 3.
- Retailers of switched access lines and retailers of interconnected VoIP service distinguish between sales to end users who also purchase Internet access from them (including affiliates) and those who do not. See Figure 4.

⁷ A broadband connection may or may not provide the end user with internet access.

Figure 3
Interconnected VoIP Subscribership by Reported Service Features, Regulatory Status,
and Customer Type as of June 30, 2019 (In thousands)

| Total | Over-the-Top (OTT) | All Other VoIP | Total |
|--------------------------|-------------------------------|---------------------------|---------------|
| ILEC | 70 | 12,594 | 12,663 |
| Non-ILEC | 10,830 | 42,970 | 53,800 |
| Total | 10,900 | 55,563 | 66,463 |
| Residential | | | |
| ILEC | 2 | 8,514 | 8,516 |
| Non-ILEC | 2,225 | 26,610 | 28,834 |
| Residential Total | 2,227 | 35,124 | 37,350 |
| Business | | | |
| ILEC | 68 | 4,080 | 4,147 |
| Non-ILEC | 8,606 | 16,360 | 24,965 |
| Business Total | 8,673 | 20,440 | 29,113 |

Note: Figures may not sum to totals due to rounding.

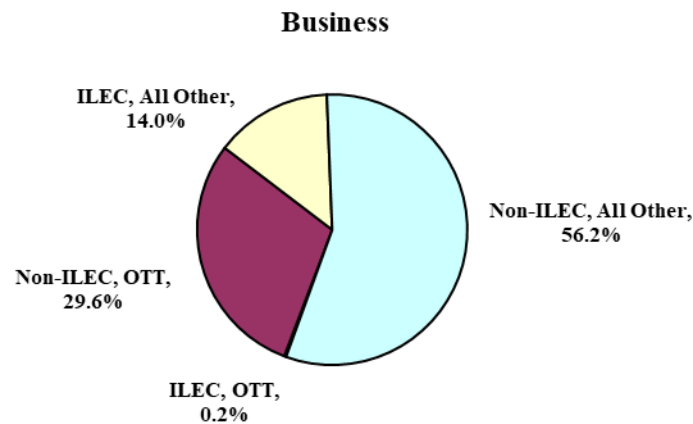
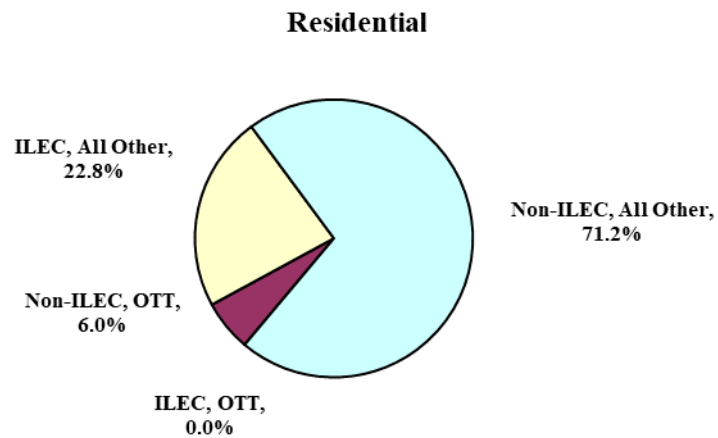
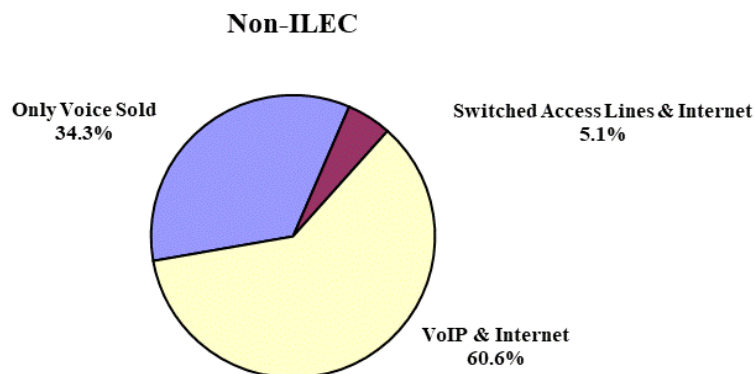
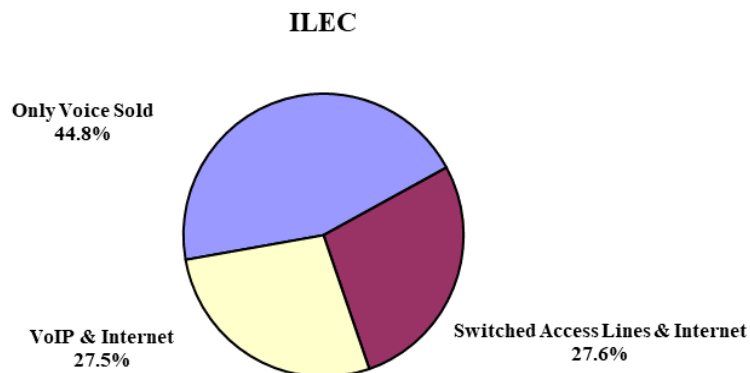


Figure 4
Retail Relationships of Wireline Voice Telephone Service with Internet Access Service
By Regulatory Status as of June 30, 2019 (In thousands)

| Total | ILEC | Non-ILEC | Total |
|------------------------------|---------------|-----------------|----------------|
| Switched Access Lines | 31,974 | 8,982 | 40,956 |
| Over-the-Top VoIP | 70 | 10,830 | 10,900 |
| All Other VoIP | 12,594 | 42,970 | 55,563 |
| Total | 44,638 | 62,782 | 107,419 |
| Sold with Internet | | | |
| Switched Access Lines | 12,332 | 3,213 | 15,545 |
| Over-the-Top VoIP | 0 | 0 | 0 |
| All Other VoIP | 12,288 | 38,062 | 50,350 |
| Total | 24,620 | 41,275 | 65,895 |
| Sold Without Internet | | | |
| Switched Access Lines | 19,642 | 5,769 | 25,411 |
| Over-the-Top VoIP | 70 | 10,830 | 10,900 |
| All Other VoIP | 306 | 4,908 | 5,213 |
| Total | 20,018 | 21,507 | 41,524 |

Note: Figures may not sum totals due to rounding.



Detailed Voice Telephone Services Data

- Table 1 summarizes national-level voice telephone service subscription data for June and December 2018, and for June 2019, for individual data elements collected by FCC Form 477.
- Table 2 shows the number of entities that reported subscription data for the same time periods.

Table 1 and Table 2 are available in Excel format at <https://www.fcc.gov/voice-telephone-services-report>. Also available at that page are:

- State-level Subscriptions table in Excel format (data back to June 2018)
- State-level Number of Providers table in Excel format (data back to June 2018)
- County-level Subscriptions information in Excel format (data back to June 2014)
- CSV-format file of the consistent data series that are available back to December 2008, when interconnected VoIP retailers were first required to report subscription information on Form 477.

Earlier data, back to December 1999, are available in the Local Telephone Competition reports at <https://www.fcc.gov/general/local-telephone-competition-reports>. However, researchers using the complete data series for trend analysis should be aware of the following discontinuities in the data.

- Between December 1999 and December 2004, Form 477 collected state-by-state data only from local exchange carriers with at least 10,000 end-user switched access lines in service in the state, and from facilities-based mobile voice carriers with at least 10,000 mobile voice subscriptions in service in the state.
- Prior to December 2008, interconnected VoIP service retailers were not required to submit Form 477, but an unknown amount of interconnected VoIP service was included along with the switched access lines reported by some Form 477 filers.
- As discussed earlier in this report, the category standalone interconnected VoIP that was reported from December 2008 to December 2013 is different (that is, includes more subscriptions) than the category over-the-top interconnected VoIP that is reported starting with the June 2014 data.⁸

⁸ See footnote 3, above.

Table 1. Voice Subscriptions (in Thousands) - Total for US

| Reference | Data element | June 2018 | Dec 2018 | June 2019 |
|-----------|--------------------------------------------------------------------------------------------------------------|-----------|----------|-----------|
| 1 | Mobile telephony | 342,564 | 348,242 | 351,474 |
| 2 | Directly-billed or prepaid | 304,103 | 308,726 | 310,668 |
| 3 | Not directly-billed or prepaid | 38,461 | 39,516 | 40,807 |
| 4 | Wireline End-User Switched Access Lines and Interconnected VoIP Subscriptions | 113,053 | 110,436 | 107,419 |
| 5 | Incumbent LECs | 50,093 | 47,256 | 44,638 |
| 6 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 62,960 | 63,180 | 62,782 |
| 7 | Consumer-grade service | 58,020 | 56,208 | 53,819 |
| 8 | Incumbent LECs | 27,231 | 25,604 | 24,026 |
| 9 | Other (Non-ILECs) | 30,789 | 30,604 | 29,793 |
| 10 | Business & Government-grade service | 55,033 | 54,228 | 53,600 |
| 11 | Incumbent LECs | 22,862 | 21,652 | 20,612 |
| 12 | Other (Non-ILECs) | 32,171 | 32,576 | 32,989 |
| 13 | Local exchange telephone service (Switched Access Lines) | 46,989 | 43,514 | 40,956 |
| 14 | Incumbent LECs | 36,669 | 34,054 | 31,974 |
| 15 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 10,320 | 9,460 | 8,982 |
| 16 | Consumer-grade service | 18,863 | 17,609 | 16,469 |
| 17 | Incumbent LECs | 17,774 | 16,568 | 15,510 |
| 18 | Other (Non-ILECs) | 1,090 | 1,041 | 959 |
| 19 | Business & Government-grade service | 28,126 | 25,905 | 24,487 |
| 20 | Incumbent LECs | 18,895 | 17,486 | 16,464 |
| 21 | Other (Non-ILECs) | 9,231 | 8,419 | 8,023 |
| 22 | Interconnected VoIP Subscriptions - Note: Includes both Over-the-top (OTT) and All Other sub-categories. | 66,064 | 66,922 | 66,463 |
| 23 | Incumbent LECs | 13,424 | 13,201 | 12,663 |
| 24 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 52,639 | 53,720 | 53,800 |
| 25 | Consumer-grade service | 39,156 | 38,599 | 37,350 |
| 26 | Incumbent LECs | 9,457 | 9,036 | 8,516 |
| 27 | Other (Non-ILECs) | 29,699 | 29,563 | 28,834 |
| 28 | Business & Government-grade service | 26,907 | 28,323 | 29,113 |
| 29 | Incumbent LECs | 3,967 | 4,165 | 4,147 |
| 30 | Other (Non-ILECs) | 22,940 | 24,157 | 24,965 |
| 31 | Over-the-top interconnected VoIP | 9,411 | 10,144 | 10,900 |
| 32 | Incumbent LECs | 67 | 69 | 70 |
| 33 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 9,344 | 10,074 | 10,830 |
| 34 | Consumer-grade service | 2,051 | 2,318 | 2,227 |
| 35 | Incumbent LECs | 2 | 2 | 2 |
| 36 | Other (Non-ILECs) | 2,049 | 2,316 | 2,225 |
| 37 | Business & Government-grade service | 7,360 | 7,825 | 8,673 |
| 38 | Incumbent LECs | 65 | 67 | 68 |
| 39 | Other (Non-ILECs) | 7,296 | 7,758 | 8,606 |
| 40 | All Other interconnected VoIP | 56,652 | 56,779 | 55,563 |
| 41 | Incumbent LECs | 13,357 | 13,132 | 12,594 |
| 42 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 43,295 | 43,647 | 42,970 |
| 43 | Consumer-grade service | 37,106 | 36,281 | 35,124 |
| 44 | Incumbent LECs | 9,455 | 9,034 | 8,514 |
| 45 | Other (Non-ILECs) | 27,650 | 27,247 | 26,610 |
| 46 | Business & Government-grade service | 19,547 | 20,497 | 20,440 |
| 47 | Incumbent LECs | 3,902 | 4,098 | 4,080 |
| 48 | Other (Non-ILECs) | 15,645 | 16,400 | 16,360 |
| 49 | Local exchange telephone service by last-mile delivery medium | 46,989 | 43,514 | 40,956 |
| 50 | Fiber-to-the-premises | 5,805 | 5,714 | 4,604 |
| 51 | Incumbent LECs | 3,732 | 3,851 | 2,784 |
| 52 | Other (Non-ILECs) | 2,073 | 1,863 | 1,820 |
| 53 | Coaxial cable | 532 | 480 | 542 |
| 54 | Incumbent LECs | 55 | 56 | 56 |
| 55 | Other (Non-ILECs) | 478 | 424 | 486 |

Table 1. Voice Subscriptions (in Thousands) - Total for US

| Reference | Data element | June 2018 | Dec 2018 | June 2019 |
|-----------|----------------------------------------------------------------------------------------------|-----------|----------|-----------|
| 56 | Terrestrial fixed wireless | 32 | 29 | 30 |
| 57 | Incumbent LECs | 15 | 14 | 13 |
| 58 | Other (Non-ILECs) | 17 | 15 | 17 |
| 59 | Copper local loop | 40,620 | 37,292 | 35,780 |
| 60 | Incumbent LECs | 32,868 | 30,134 | 29,122 |
| 61 | Other (Non-ILECs) | 7,752 | 7,158 | 6,658 |
| 62 | All Other interconnected VoIP by last-mile delivery medium | 56,652 | 56,779 | 55,563 |
| 63 | Fiber-to-the-premises | 8,590 | 8,842 | 8,633 |
| 64 | Incumbent LECs | 6,177 | 6,230 | 6,239 |
| 65 | Other (Non-ILECs) | 2,413 | 2,612 | 2,394 |
| 66 | Coaxial cable | 34,761 | 34,384 | 33,948 |
| 67 | Incumbent LECs | 6 | 7 | 8 |
| 68 | Other (Non-ILECs) | 34,755 | 34,378 | 33,940 |
| 69 | Terrestrial fixed wireless or satellite | 112 | 189 | 200 |
| 70 | Incumbent LECs | 0 | 0 | 0 |
| 71 | Other (Non-ILECs) | 112 | 189 | 199 |
| 72 | Copper local loop | 13,190 | 13,363 | 12,783 |
| 73 | Incumbent LECs | 7,175 | 6,895 | 6,347 |
| 74 | Other (Non-ILECs) | 6,015 | 6,468 | 6,436 |
| 75 | Non-Incumbent LEC local exchange telephone service by means of provisioning | 10,320 | 9,460 | 8,982 |
| 76 | Provided over owned last-mile facilities | 3,514 | 3,162 | 3,082 |
| 77 | Provided over UNE-L obtained from unaffiliated entity | 1,529 | 1,440 | 1,352 |
| 78 | Provided over other services obtained from unaffiliated entity | 5,277 | 4,859 | 4,548 |
| 79 | Incumbent LEC local exchange telephone service provided to unaffiliated carriers for resale | 4,816 | 4,686 | 4,526 |
| 80 | Wholesale lines | 3,075 | 3,015 | 2,870 |
| 81 | UNE-L | 1,741 | 1,671 | 1,657 |
| 82 | Local exchange telephone service and long-distance service | 46,989 | 43,514 | 40,956 |
| 83 | Consumer-grade service | 18,863 | 17,609 | 16,469 |
| 84 | Incumbent LEC is preferred long-distance carrier for its local exchange service customer | 11,840 | 11,189 | 10,515 |
| 85 | Incumbent LEC is not preferred long-distance carrier for its local exchange service customer | 5,933 | 5,379 | 4,995 |
| 86 | Non-ILEC is preferred long-distance carrier for its local exchange service customer | 942 | 861 | 799 |
| 87 | Non-ILEC is not preferred long-distance carrier for its local exchange service customer | 148 | 180 | 160 |
| 88 | Business & Government-grade service | 28,126 | 25,905 | 24,487 |
| 89 | Incumbent LEC is preferred long-distance carrier for its local exchange service customer | 10,280 | 9,613 | 9,371 |
| 90 | Incumbent LEC is not preferred long-distance carrier for its local exchange service customer | 8,615 | 7,873 | 7,094 |
| 91 | Non-ILEC is preferred long-distance carrier for its local exchange service customer | 6,951 | 6,001 | 6,075 |
| 92 | Non-ILEC is not preferred long-distance carrier for its local exchange service customer | 2,280 | 2,418 | 1,948 |
| 93 | End user buys local exchange telephone service and Internet access service from same entity | 16,405 | 15,520 | 15,545 |
| 94 | End user buys both services from incumbent LEC or affiliates | 13,024 | 12,292 | 12,332 |
| 95 | End user buys both services from Non-ILEC or affiliates | 3,380 | 3,229 | 3,213 |
| 96 | End user buys interconnected VoIP and Internet access service from same entity | 52,013 | 51,929 | 50,350 |
| 97 | End user buys both services from incumbent LEC or affiliates | 13,000 | 12,828 | 12,288 |
| 98 | End user buys both services from Non-ILEC or affiliates | 39,014 | 39,101 | 38,062 |

Table 2. Number of Providers Reporting Voice Subscriptions - Total for US

| Reference | Data element | June 2018 | Dec 2018 | June 2019 |
|-----------|--------------------------------------------------------------------------------------------------------------|-----------|----------|-----------|
| 1 | Mobile telephony | 74 | 72 | 71 |
| 2 | Directly-billed or prepaid | 74 | 72 | 71 |
| 3 | Not directly-billed or prepaid | 8 | 7 | 7 |
| 4 | Wireline End-User Switched Access Lines and Interconnected VoIP Subscriptions | 1,831 | 1,912 | 1,959 |
| 5 | Incumbent LECs | 731 | 727 | 722 |
| 6 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 1,404 | 1,493 | 1,549 |
| 7 | Consumer-grade service | 1,238 | 1,273 | 1,287 |
| 8 | Incumbent LECs | 729 | 727 | 721 |
| 9 | Other (Non-ILECs) | 802 | 841 | 870 |
| 10 | Business & Government-grade service | 1,735 | 1,816 | 1,860 |
| 11 | Incumbent LECs | 726 | 723 | 718 |
| 12 | Other (Non-ILECs) | 1,305 | 1,396 | 1,449 |
| 13 | Local exchange telephone service (Switched Access Lines) | 997 | 992 | 975 |
| 14 | Incumbent LECs | 727 | 724 | 719 |
| 15 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 517 | 513 | 504 |
| 16 | Consumer-grade service | 899 | 896 | 879 |
| 17 | Incumbent LECs | 727 | 724 | 718 |
| 18 | Other (Non-ILECs) | 411 | 407 | 400 |
| 19 | Business & Government-grade service | 978 | 974 | 961 |
| 20 | Incumbent LECs | 723 | 721 | 716 |
| 21 | Other (Non-ILECs) | 494 | 493 | 488 |
| 22 | Interconnected VoIP Subscriptions - Note: Includes both Over-the-top (OTT) and All Other sub-categories. | 1,216 | 1,321 | 1,388 |
| 23 | Incumbent LECs | 116 | 135 | 143 |
| 24 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 1,169 | 1,265 | 1,332 |
| 25 | Consumer-grade service | 552 | 606 | 636 |
| 26 | Incumbent LECs | 55 | 77 | 81 |
| 27 | Other (Non-ILECs) | 518 | 562 | 590 |
| 28 | Business & Government-grade service | 1,127 | 1,228 | 1,290 |
| 29 | Incumbent LECs | 111 | 128 | 138 |
| 30 | Other (Non-ILECs) | 1,084 | 1,179 | 1,238 |
| 31 | Over-the-top interconnected VoIP | 744 | 814 | 854 |
| 32 | Incumbent LECs | 28 | 29 | 30 |
| 33 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 732 | 803 | 843 |
| 34 | Consumer-grade service | 164 | 181 | 180 |
| 35 | Incumbent LECs | 11 | 13 | 13 |
| 36 | Other (Non-ILECs) | 157 | 174 | 171 |
| 37 | Business & Government-grade service | 706 | 771 | 810 |
| 38 | Incumbent LECs | 26 | 26 | 27 |
| 39 | Other (Non-ILECs) | 696 | 763 | 801 |
| 40 | All Other interconnected VoIP | 703 | 734 | 775 |
| 41 | Incumbent LECs | 108 | 125 | 136 |
| 42 | Other (Non-ILECs) - Note: ILEC voice-service affiliate operating outside ILEC's study area is included here. | 659 | 679 | 720 |
| 43 | Consumer-grade service | 448 | 488 | 516 |
| 44 | Incumbent LECs | 51 | 70 | 75 |
| 45 | Other (Non-ILECs) | 418 | 447 | 473 |
| 46 | Business & Government-grade service | 639 | 667 | 704 |
| 47 | Incumbent LECs | 103 | 119 | 131 |
| 48 | Other (Non-ILECs) | 599 | 618 | 653 |
| 49 | Local exchange telephone service by last-mile delivery medium | 997 | 992 | 975 |
| 50 | Fiber-to-the-premises | 754 | 757 | 756 |
| 51 | Incumbent LECs | 591 | 601 | 611 |
| 52 | Other (Non-ILECs) | 368 | 367 | 361 |
| 53 | Coaxial cable | 81 | 83 | 83 |
| 54 | Incumbent LECs | 19 | 23 | 21 |
| 55 | Other (Non-ILECs) | 70 | 69 | 72 |

Table 2. Number of Providers Reporting Voice Subscriptions - Total for US

| Reference | Data element | June 2018 | Dec 2018 | June 2019 |
|-----------|----------------------------------------------------------------------------------------------|-----------|----------|-----------|
| 56 | Terrestrial fixed wireless | 82 | 78 | 75 |
| 57 | Incumbent LECs | 50 | 49 | 40 |
| 58 | Other (Non-ILECs) | 47 | 42 | 45 |
| 59 | Copper local loop | 792 | 783 | 773 |
| 60 | Incumbent LECs | 591 | 581 | 573 |
| 61 | Other (Non-ILECs) | 332 | 330 | 324 |
| 62 | All Other interconnected VoIP by last-mile delivery medium | 703 | 734 | 775 |
| 63 | Fiber-to-the-premises | 441 | 478 | 509 |
| 64 | Incumbent LECs | 95 | 113 | 123 |
| 65 | Other (Non-ILECs) | 402 | 429 | 456 |
| 66 | Coaxial cable | 214 | 214 | 220 |
| 67 | Incumbent LECs | 9 | 9 | 12 |
| 68 | Other (Non-ILECs) | 210 | 210 | 213 |
| 69 | Terrestrial fixed wireless or satellite | 236 | 250 | 277 |
| 70 | Incumbent LECs | 12 | 12 | 11 |
| 71 | Other (Non-ILECs) | 227 | 241 | 269 |
| 72 | Copper local loop | 230 | 220 | 228 |
| 73 | Incumbent LECs | 48 | 52 | 56 |
| 74 | Other (Non-ILECs) | 203 | 193 | 198 |
| 75 | Non-Incumbent LEC local exchange telephone service by means of provisioning | 517 | 513 | 504 |
| 76 | Provided over owned last-mile facilities | 382 | 379 | 381 |
| 77 | Provided over UNE-L obtained from unaffiliated entity | 113 | 110 | 101 |
| 78 | Provided over other services obtained from unaffiliated entity | 199 | 199 | 188 |
| 79 | Incumbent LEC local exchange telephone service provided to unaffiliated carriers for resale | 23 | 21 | 21 |
| 80 | Wholesale lines | 21 | 19 | 19 |
| 81 | UNE-L | 11 | 10 | 10 |
| 82 | Local exchange telephone service and long-distance service | 997 | 992 | 975 |
| 83 | Consumer-grade service | 899 | 896 | 879 |
| 84 | Incumbent LEC is preferred long-distance carrier for its local exchange service customer | 677 | 677 | 674 |
| 85 | Incumbent LEC is not preferred long-distance carrier for its local exchange service customer | 678 | 670 | 670 |
| 86 | Non-ILEC is preferred long-distance carrier for its local exchange service customer | 385 | 383 | 377 |
| 87 | Non-ILEC is not preferred long-distance carrier for its local exchange service customer | 276 | 272 | 275 |
| 88 | Business & Government-grade service | 978 | 974 | 961 |
| 89 | Incumbent LEC is preferred long-distance carrier for its local exchange service customer | 674 | 676 | 671 |
| 90 | Incumbent LEC is not preferred long-distance carrier for its local exchange service customer | 657 | 645 | 651 |
| 91 | Non-ILEC is preferred long-distance carrier for its local exchange service customer | 448 | 449 | 444 |
| 92 | Non-ILEC is not preferred long-distance carrier for its local exchange service customer | 320 | 323 | 309 |
| 93 | End user buys local exchange telephone service and Internet access service from same entity | 909 | 905 | 883 |
| 94 | End user buys both services from incumbent LEC or affiliates | 710 | 707 | 703 |
| 95 | End user buys both services from Non-ILEC or affiliates | 440 | 436 | 420 |
| 96 | End user buys interconnected VoIP and Internet access service from same entity | 638 | 666 | 704 |
| 97 | End user buys both services from incumbent LEC or affiliates | 103 | 117 | 124 |
| 98 | End user buys both services from Non-ILEC or affiliates | 594 | 615 | 655 |

Technical Notes

General

Detailed information about the current Form 477 reporting requirements is available at <https://www.fcc.gov/general/form-477-resources-filers>.

See Glossary for definitions of terms used in this report.

Counting lines and subscribers

- Form 477 counts both switched access lines and interconnected VoIP subscriptions as the maximum number of calls that may be active, simultaneously, from the end user's location under the purchased service plan. All VoIP subscriptions discussed in this report are interconnected VoIP subscriptions.
- Form 477 data may not count all VoIP phone connections to Internet Protocol Private Branch Exchange (IP PBX) equipment that is owned by business end users because of the variety of ways the IP PBX may connect to the public switched telephone network.

Holding company-subsidiary relationships

- When counting service providers that report voice telephone service in a particular geography, we count a holding company or common-control entity no more than once in any specified sub-category of total providers.
- Nationwide counts of providers are unique counts for any specified sub-category of total providers (for example, all non-ILECs or all interconnected VoIP providers); an entity operating in multiple states is counted only once.

ILEC-CLEC affiliations

- If a CLEC is affiliated with an ILEC and reports some end-user switched access lines or interconnected VoIP subscriptions in the ILEC's service area in the state, then the switched access lines or interconnected VoIP subscriptions reported by the CLEC are allocated between the ILEC and non-ILEC categories based on staff estimates.

Mobile voice subscriptions

- Commercial mobile radio service carriers that own or operate wireless networks report both their retail voice service subscriptions and the retail subscriptions of the mobile voice service resellers that use their network. Mobile voice service resellers do not file Form 477.

UNE-Platform lines replaced by commercial agreements

- UNE-Platform (UNE-P) was the combination of ILEC loop UNE, switching UNE, and transport UNE. The Commission directed CLECs to migrate their retail customers served by UNE-P to an alternative arrangement within 12 months of the effective date of the *Triennial Review Remand Order*, that is, by March 11, 2006. See C.F.R. § 51.319(d)(2)(ii). Such lines are reported on Form 477 as ILEC wholesale lines provided to unaffiliated providers for resale.

Glossary

| Term | Definition |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All Other interconnected VoIP | Interconnected VoIP service other than OTT interconnected VoIP. (See the definition of OTT VoIP, below.) |
| Broadband connection | A wired line or wireless channel that terminates at an end-user location and enables the end user to receive information from and/or send information to the Internet at information transfer rates exceeding 200 kilobits per second in at least one direction. |
| Circuit switching | A method of completing electronic communications in which a transmission path is established for dedicated use by a communication; the basis of the public switched telephone network. |
| Coaxial cable | The technology widely used by cable system operators to terminate their services at the end user's premises. |
| Copper local loop | The technology widely used by telephone companies to terminate their service at the end user's premises. |
| CLEC | Competitive Local Exchange Carrier: A local exchange carrier (LEC) that operates within the traditional service area of an unaffiliated incumbent LEC. |
| End users | Residential, business, institutional, or government entities that use services for their own purposes and who do not resell such services to other entities. |
| Fixed wireless service | A radio communication service between specified fixed points. |
| FTTP or FTTH | Fiber to the Premises (Home): A network access architecture in which optical fiber is deployed all the way to the customer's premises (home). |
| Internet access service | Service that provides end users access to the Internet. |
| ILEC | Incumbent Local Exchange Carrier: A company or cooperative that was providing telephone service in a localized area, typically on a monopoly basis, prior to enactment of the Telecommunications Act of 1996. |
| Internet protocol or IP | A language and set of formal rules that govern how packets transit the Internet. |
| Interconnected VoIP | A service that enables real-time, two-way voice communications; requires a broadband connection from the user's location; requires Internet-protocol compatible customer premises equipment; and permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network. |
| LEC | Local Exchange Carrier: A company that provides telephone service within a localized area and access services that connect its customers to long-distance (Interexchange Carrier) networks. |
| Local loop | The physical connection between the customer's premises and the telephone company's local switching office, typically provided using copper, fiber, or a combination of copper and fiber facilities. |
| Mobile wireless service | A radio communication service between mobile and fixed stations, or between mobile stations. |

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Non-ILEC | Any provider of communications services who does not have ILEC regulatory status. A voice-service affiliate of an ILEC that is operating outside the ILEC's traditional service area ("study area") is a Non-ILEC. |
| OTT interconnected VoIP | Over-the-top interconnected VoIP: Service delivered to the end-user customer's premises over a high-capacity connection that the customer obtains (that is, buys), or has the use of, from an entity not affiliated with the interconnected VoIP service provider. (Colloquially, "bring-your-own-broadband.") |
| PBX | Private Branch Exchange: A communications switch that is owned or leased by the service provider's end-user customer and generally located on the customer's premises. |
| Packet switching | A method of completing electronic communications in which the information is disassembled into discrete packets that are transmitted independently and later reassembled; IP is an example. |
| Retail wireline voice telephone service | Switched access lines and interconnected VoIP subscriptions for which an end user is the customer. |
| Switched access line | A service connection between an end user and the local telephone company's switch; the basis of plain old telephone service (POTS). |
| UNE | Unbundled Network Element: A physical or functional element of an ILEC network that must be provided to a CLEC at a cost-based price, as provide for in the Telecommunications Act of 1996. |
| UNE-L | UNE-Loop: An ILEC unbundled local loop provided to a CLEC at a cost-based price. |
| Wholesale switched access lines | Local telephone service provided to an unaffiliated telephone company, which resells the service to end users; typically provided by an ILEC to a CLEC. |

Customer Response

Publication: *Voice Telephone Services: Status as of June 30, 2019*

You can help us provide the best possible information to the public by completing this form and returning it to the Industry Analysis Division of the FCC's Office of Economics and Analytics.

1. Please check the category that best describes you:
 - ☐ press
 - ☐ current telecommunications carrier
 - ☐ potential telecommunications carrier
 - ☐ business customer evaluating vendors/service options
 - ☐ consultant, law firm, lobbyist
 - ☐ other business customer
 - ☐ academic/student
 - ☐ residential customer
 - ☐ FCC employee
 - ☐ other federal government employee
 - ☐ state or local government employee
 - ☐ Other (please specify)

2. Please rate the report:

| | Excellent | Good | Satisfactory | Poor | No opinion |
|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Data accuracy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Data presentation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Timeliness of data | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Completeness of data | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Text clarity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Completeness of text | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

3. Overall, how do you rate this report?

| | Excellent | Good | Satisfactory | Poor | No opinion |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. How can this report be improved?

5. May we contact you to discuss possible improvements?
 Name:
 Telephone #:

| | | |
|------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------|
| To discuss the information in this report, contact: 202-418-0940 or for users of TTY equipment, call 202-418-0484 | | |
| Fax this response to 202-418-0520 Scan and email to OEA-IADReports@fcc.gov | or | Mail this response to FCC/OEA/IAD, Mail Stop 1600 F Washington, DC 20554 |